Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte HIROSHI KANEDA, KENJI HASHIZUME, HISAO KATOH, MASATOSHI OKAMURA and HARUO SHIBA

Appeal No. 1996-1456
Application No. 08/059,840

ON BRIEF

Before FRANKFORT, McQUADE and BAHR, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Hiroshi Kaneda et al. appeal from the final rejection of claims 1 through 4 and 7 through 26, all of the claims pending in the application.[1] We reverse and remand.

THE INVENTION

The invention relates to a recording medium cartridge comprising a pair of casing members formed of crystalline resin, with a filler added to the resin to improve its welding properties. Representative claims 1 and 15 read as follows:

[1] Claims 21 through 26 have been amended subsequent to final rejection.

1. A recording medium cartridge comprising:

a casing in which a recording medium is received;

said casing comprising an upper casing member and a lower casing member jointed to each other;

said upper and lower casing members being made of crystalline resin and jointed together by welding;

said crystalline resin having a filler which permits said crystalline resin to exhibit improved welding properties incorporated therein, said filler constitutes 10 percent to 30 percent by weight of the crystalline resin mixture.

15. In a recording medium cartridge formed from a pair of molded casing members that are welded together by ultrasonic energy, the improvement comprising:

each casing member is formed from a crystalline resin and a filler material, the filler material having a characteristic of increasing the ultrasonic welding properties of the molded casing member;

a plurality of projection members extend from one surface of each molded casing member and are respectively aligned when the respective casing members are contacted together for welding; and

means, indented on the other surface of at least one casing member is provided to receive a welding horn, for transmission of an application of ultrasonic energy to the contacted surfaces of the projection members.

THE PRIOR ART

The references relied on by the examiner as evidence of obviousness are:

Kato	4,849,844	July 18, 1989
Kita	5,199,593	Apr. 6, 1993
Sasaki (Hitachi Maxell) European Patent Document	0,214,604	Mar. 18, 1987
Young et al. (Young)	2,210,352	June 7, 1989

British Patent Document

THE REJECTIONS

Claims 1 through 4 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hitachi Maxell in view of Kato.

Claims 8, 9, 12 through 14, 21, 22 and 24 through 26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hitachi Maxell in view of Kato and Kita.

Claims 10, 11, 15 through 20 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hitachi Maxell in view of Kato, Kita and Young.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 21[2] and 23) and to the examiner's main and supplemental answers (Paper Nos. 18 and 24) for the respective positions of the appellants and the examiner with regard to the merits of these rejections.[3]

[2] Paper No. 21 is the second revised main brief submitted by the appellants.

[3] As a result of the amendments made subsequent to final rejection (see n.1, supra), the examiner has (1) withdrawn the 35 U.S.C. § 112, second paragraph, rejection of claims 21, 23 and 26 which was set forth in the final rejection (see the advisory action dated December 1, 1994, Paper No. 12) and (2) withdrawn the Young reference from the 35 U.S.C. § 103(a) rejection of claims 22, 24 and 25 which was set forth in the final rejection (see pages 2 and 8 in the main answer).

DISCUSSION

I. Independent claims 1, 21 and 26

Hitachi Maxell, the examiner's primary reference, discloses a magnetic tape cartridge case designed to attenuate modulation noise generated by remote oscillation sources. As described in the reference,

> a cartridge case is made of a material of a complex plastic material mixed with a filler. In order to reduce an outside oscillation of the magnetic tape cartridge occurred by transferring from a motor etc. arranged in a tape recorder to a magnetic tape cartridge, the complex plastic material is made of a mixture of a plastic base made of polyolefine, such as polyethylene, and polypropylene etc., and a filler of 45 percent to 65 percent by weight of the plastic base in the shape of a particle, being made of calcium carbonate or barium sulfate. . . .
>
> The reason why the mixture rate of the filler is in the range of 45 percent to 65 percent by weight of the plastic base is as follows. That is, in case the mixture rate is less than 45 percent, the cartridge case may be often broken, on the other hand, in case the mixture rate is more than 65 percent, the plastic material may not be filled in a mold satisfactorily when the plastic material is formed in a shape because of the less fluidity of the plastic material, resulting in that the problems occur in the manufacturing process and the manufacturing technique [pages 4 and 5].

The examiner concedes (see page 4 in the main answer) that Hitachi Maxell is not responsive to the limitations in independent claim 1 requiring the first and second casing members to be made of crystalline resin having a filler constituting "10 percent to 30 percent by weight of the crystalline resin

mixture," or the corresponding limitations in independent claim 21 requiring first and second housing shells molded from a combination of crystalline resin and a filler material representing "between 10 and 30% by weight of the combination," and independent claim 26 requiring first and second housing shells molded from a combination of crystalline resin and a glass fiber material representing "between 10 and 30% by weight of the combination."[4] The appellants' specification explains that

> [a] content of the filler below 10% by weight causes the welding properties of the crystalline resin to be deteriorated, whereas the content above 30% by weight causes heat resistance, resistance to thermal deformation, resistance to impact or shock, and strength of the casing to be deteriorated, as well as causes wearing of a mold for forming the casing and deterioration in moldability [pages 7 and 8].

The examiner's reliance on Kato to cure the acknowledged deficiency in Hitachi Maxell is not well founded.

[4] The 45 to 65 percent filler range disclosed by Hitachi Maxell cannot be directly compared with the 10 to 30 percent filler range specified in claims 1, 21 and 26. The 45 to 65 percent filler range is relative to the associated plastic base, not the plastic base-filler mixture, while the 10 to 30 percent range recited in the claims is relative to the resin-filler mixture or combination. The 45 percent to 65 percent filler range constitutes 45 to 65 parts filler per 100 parts plastic base, or about 31 to about 39 percent of the plastic-filler mixture. Of course, the Hitachi Maxell range as so converted still fails to respond to the 10 to 30 percent filler range recited in appealed claims 1, 21 and 26.

Kato discloses a disk cartridge having a plastic shutter instead of a conventional metal shutter. In order to provide good moldability and high mechanical strength, heat resistance and slidability, Kato makes the shutter of a thermoplastic material, such as polyethylene or polypropylene, and a filler, such as calcium carbonate, which is 5% to 30% by weight, and preferably 10% to 20% by weight, of the plastic-filler composite (see column 2, lines 14 through 41). Kato teaches that when the filler is below 5% by weight, the shutter will have poor heat resistance and mechanical strength, and that when the filler is above 30% by weight, the plastic composite in molten form will have poor flowability and moldability (see column 2, lines 51 through 57).

According to the examiner, it would have been obvious to one of ordinary skill in the art at the time the invention was made "to make the cartridge casing of Hitachi Maxell out of polypropylene with a 10 to 20% by weight filler of calcium carbonate as taught by Kato ... since it has high mechanical strength and heat resistance" (main answer, page 5). The problem here, however, is that this proposed reference combination runs counter to the express teachings of Hitachi Maxell which mandate that the percent by weight of filler to plastic not fall below 45 percent or rise above 65 percent. Given that Kato's plastic-filler composition is specifically designed for a disk cartridge

shutter as opposed to a tape cartridge of the sort disclosed by Hitachi Maxell, it is not seen that Kato would have provided the artisan with any suggestion to disregard Hitachi Maxell's strictures regarding filler to plastic percentage. Thus, the appellants' position that the combination of Hitachi Maxell and Kato advanced by the examiner rests on impermissible hindsight is persuasive. Furthermore, this flaw in the basic reference combination finds no cure in the examiner's application of Kita and/or Young.

Hence, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 1 as being unpatentable over Hitachi Maxell in view of Kato, or the standing 35 U.S.C. § 103(a) rejection of claims 21 and 26 as being unpatentable over Hitachi Maxell in view of Kato and Kita. We also shall not sustain the standing 35 U.S.C. § 103(a) of claims 2 through 4 and 7, which depend from claim 1, as being unpatentable over Hitachi Maxell in view of Kato, the standing 35 U.S.C. § 103(a) rejection of claims 8, 9 and 12 through 14, which depend from claim 1, and claims 22, 24 and 25, which depend from claim 21, as being unpatentable over Hitachi Maxell in view of Kato and Kita, or the standing 35 U.S.C. § 103(a) rejection of claims 10 and 11, which depend from claim 1, and claim 23, which depends from claim 21, as being unpatentable over Hitachi Maxell in view of Kato, Kita and Young.

II. Independent claim 15

Independent claim 15 lacks the 10% to 30% by weight filler limitation set forth in claims 1, 21 and 26, but does require (1) a plurality of projection members extending from one surface of each casing member which are respectively aligned when the casing members are contacted together for welding and (2) means indented on the other surface of at least one casing member to receive a welding horn for transmission of an application of ultrasonic energy to the contacted surfaces of the projection members. Implicitly acknowledging the lack in Hitachi Maxell and Kato of any teaching or suggestion of a recording medium cartridge having these features, the examiner turns to Kita and Young.

Kita discloses a tape cassette case composed of upper and lower half cases formed of, for example, ABS resin. The half cases include complementary projections (see Figures 6 through 24) which are adapted to be abutted and ultrasonically welded together by energy supplied from a welding horn 80 applied against the rear surface of one of the half cases (see Figures 10 through 24). The welding projections are particularly configured to avoid problems caused by excess melted resin and resin particles generated during the welding operation (see column 4, line 59 et seq.).

Young discloses a tape cassette having upper and lower casing half members which can be assembled without the use of screws. To this end, the lower half member includes at each

corner a projection comprising an upstanding pole 4 and protrusion 3, and the upper half member includes corresponding pole-receiving projections or portions 9 each consisting of a pole-receiving hole 6, a deformation hole 7 and a through hole 8 (see Figure 2). When the half members are mated to one another, the upstanding protrusions 3 extend through the holes 8 into the deformation holes 7. An acoustic horn is inserted into the deformation holes 7 to apply pressure to the tips of the protrusions 3 to deform them into rounded heads 3' which hold the half members together (see Figure 3).

In the examiner's view, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the casing of Hitachi Maxell, as modified in view of Kato, with (1) welding projections of the sort disclosed by Kita to eliminate the problem of excess melted resin during the welding process (see pages 6 and 7 in the main answer) and (2) a recess or indent as taught by Young to allow a welding horn to effectively weld the casing members together (see page 7 in the main answer).

As described above, the purpose of Young's recess or indent 7 is to allow a welding horn to apply pressure to protrusions 3 to deform them into rounded heads 3'. Kita's welding projections differ markedly from the corresponding projections disclosed by Young, and have no apparent need for a recess of the sort

disclosed by Young. Neither reference indicates that the use of such an indent in conjunction with the welding projections disclosed by Kita would improve the welding process as asserted by the examiner. It is therefore evident that the only suggestion for combining Kita and Young with Hitachi Maxell and Kato in the manner proposed by the examiner stems from impermissible hindsight knowledge.

Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 15, or of claims 16 through 20 which depend therefrom, as being unpatentable over Hitachi Maxell in view of Kato, Kita and Young.

III. Remand

The application is remanded to the examiner for consideration of the following matters.

I. Whether the appellants' original disclosure meets the written description requirement of 35 U.S.C. § 112, first paragraph, with respect to the subject matter recited in claims 15 and 16.[5] Claim 15 recites a recording medium cartridge

[5] The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language. In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983). The content of the drawings may also be considered in determining compliance with the written description requirement. Id.

comprising, inter alia, a pair of casing members, projection members extending from one surface of each casing member, and means indented on the other surface of "at least one casing member" to receive a welding horn. The original disclosure, on the other hand, indicates that the indent or recess 59 is on only one of the casing members (see specification page 11 and drawing Figure 9). Claim 16 depends from claim 15 and further defines one of the projection members as "an annular recess." There is no apparent support for this "annular recess" projection member in the original disclosure.

II. Whether the teachings of Hitachi Maxell and Young would have rendered the subject matter recited in claim 15, and any claim depending therefrom, obvious within the meaning of 35 U.S.C. § 103(a). It is arguable that the collective teachings of Hitachi Maxell and Young would have suggested the combination of the casing composition disclosed by Hitachi Maxell and the casing structure disclosed by Young to gain the above noted advantages of both, and that the casing resulting from this combination would meet all of the limitations in claim 15.

SUMMARY

The decision of the examiner to reject claims 1 through 4 and 7 through 26 under 35 U.S.C. § 103(a) is reversed, and the application is remanded to the examiner for further consideration.

REVERSED AND REMANDED

CHARLES E. FRANKFORT Administrative Patent Judge	)
JOHN P. McQUADE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JENNIFER D. BAHR Administrative Patent Judge	)

JPM/gjh

PRICE, GESS & UBELL
2100 S.E. MAIN STREET
SUITE 250
IRVINE, CA 92714

GJH

Appeal No. 1996-1456
Application No. 08/059,840

APJ McQUADE

APJ FRANKFORT

APJ BAHR

REVERSED and REMANDED

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